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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/643,882

08/20/2003

In-sang Song

277/016

5218

7590

09/22/2004

LEE & STERBA, P.C.

SUITE 2000

1101 WILSON BOULEVARD

ARLINGTON, VA 22209

EXAMINER

ROJAS, BERNARD


ART UNIT

PAPER NUMBER

2832

DATE MAILED: 09/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	<p>Application No.</p> <p>10/643,882</p>	<p>Applicant(s)</p> <p>SONG ET AL.</p>	
	<p>Examiner</p> <p>Bernard Rojas</p>	<p>Art Unit</p> <p>2832</p>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 11-15 and 26-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Embodiment 1 in the reply filed on 9/10/04 is acknowledged.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 and 21-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Ozgur [US 2002/0171121 A1].

Claim 21, Ozgur discloses a micro switch [figure 2d], comprising:

a substrate [25];

a dielectric layer formed on the substrate [56], the dielectric layer having a movement region [50] formed of a predetermined portion of the dielectric layer that is capable of moving up and down by a hinge part [see figure 2d] formed on one side of the movement region [paragraph 41];

a conductive layer [53] formed on a predetermined portion of the movement region;

first and second electric conductors [60, 61] formed a predetermined distance above the conductive layer;

a lower electrode [51] formed on the movement region; and

an upper electrode [58] formed a predetermined distance above the movement region, causing the conductive layer to move upwards when an electrostatic force is

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occurred between the lower electrode, and resistively coupled with the first and second electric conductors to allow a current signal to flow between the first and second electric conductors [paragraphs 41 and 42].

Claim 22, Ozgur discloses the micro switch as claimed in claim 21, that a portion of the substrate positioned under the movement region, a portion of the dielectric layer surrounding the movement region except where the hinge part is formed, and a portion of the substrate positioned under a portion of the dielectric layer surrounding the movement region, are selectively etched to provide an etched region for allowing the movement region to move up and down [figure 2d].

Claim 23, Ozgur discloses the micro switch as claimed in claim 21, that the lower electrode is formed between the conductive layer and the hinge part [figure 2d].

Claim 24, Ozgur discloses the micro switch as claimed in claim 21, with anchors [generally located around 63] respectively supporting the electric conductors and the upper electrode. A Mem switch has to have signal terminals in order to apply signals to the electric conductors so that a current signal can be selectively allowed to flow between the first and second electric conductors.

Claim 25, Ozgur discloses the micro switch as claimed in claim 24, wherein any of the conductive layer, the electric conductors, the lower electrode, the upper electrode, the anchors and the signal terminals is formed of Au [paragraphs 48-50].

Claim 1, Ozgur discloses the micro switch as claimed in claim 21, wherein the dielectric layer further includes another hinge part [figure 2d] that is capable of moving up and down, the another hinge part being formed on a side of the movement region

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opposite the hinge part, the hinge part and the another hinge part forming two hinge parts;

and further comprising another lower electrode [52] formed on the movement region, the another lower electrode and the lower electrode forming two lower electrodes; and

another upper electrode [59] formed a predetermined distance above the two lower electrodes, the another upper electrode and the upper electrode forming two upper electrodes, the two upper electrodes moving the conductive layer and the dielectric film upwards when an electrostatic force occurs in the lower electrodes, and capacitively coupled with the first and second electric conductors to allow a current signal to flow between the first and second electric conductors [paragraphs 41 and 42].

Claim 2, Ozgur discloses the micro switch as claimed in claim 1, wherein a portion of the substrate positioned under the movement region, a portion of the dielectric layer surrounding the movement region except where the two hinge parts are formed, and a portion of the substrate positioned under a portion of the dielectric layer surrounding the movement region, are selectively etched to provide an etched region for allowing the movement region to move up and down [figure 2d].

Claim 3, Ozgur discloses the micro switch as claimed in claim 1, wherein the two lower electrodes are respectively formed between the conductive layer and the two hinge parts [figure 2d].

Claim 4, Ozgur discloses the micro switch as claimed in claim 1, further comprising anchors [generally around 63] respectively supporting the first and second

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electric conductors and the two upper electrodes. A Mem switch has to have signal terminals in order to apply signals to the electric conductors so that a current signal can be selectively allowed to flow between the first and second electric conductors.

Claim 5, Ozgur discloses the micro switch as claimed in claim 4, wherein any of the conductive layer, the electric conductors, the lower electrode, the upper electrode, the anchors and the signal terminals is formed of Au [paragraphs 48-50].

Claim 6, Ozgur discloses the micro switch as claimed in claim 21, wherein a dielectric film formed on the conductive layer [paragraph 41].

Claim 7, Ozgur discloses the micro switch as claimed in claim 6, wherein a portion of the substrate positioned under the movement region, a portion of the dielectric layer surrounding the movement region except where the two hinge parts are formed, and a portion of the substrate positioned under a portion of the dielectric layer surrounding the movement region, are selectively etched to provide an etched region for allowing the movement region to move up and down [figure 2d].

Claim 8, Ozgur discloses the micro switch as claimed in claim 6, that the lower electrode is formed between the conductive layer and the hinge part [figure 2d].

Claim 9, Ozgur discloses anchors [generally around 63] respectively supporting the electric conductors and the upper electrode. A Mem switch has to have signal terminals in order to apply signals to the electric conductors so that a current signal can be selectively allowed to flow between the first and second electric conductors.

Claim 10, Ozgur discloses the micro switch as claimed in claim 9, wherein any of the conductive layer, the electric conductors, the lower electrode, the upper electrode, the anchors and the signal terminals is formed of Au [paragraphs 48-50].

Claim 16, Ozgur discloses the micro switch as claimed in claim 1, wherein a dielectric film formed on the dielectric layer [paragraph 41].

Claim 17, Ozgur discloses the micro switch as claimed in claim 16, wherein a portion of the substrate positioned under the movement region, a portion of the dielectric layer surrounding the movement region except where the two hinge parts are formed, and a portion of the substrate positioned under a portion of the dielectric layer surrounding the movement region, are selectively etched to provide an etched region for allowing the movement region to move up and down [figure 2d].

Claim 18, Ozgur discloses the micro switch as claimed in claim 16, wherein the two lower electrodes are respectively formed between the conductive layer and the two hinge parts [figure 2d].

Claim 19, Ozgur discloses the micro switch as claimed in claim 16, further comprising anchors [generally around 63] respectively supporting the first and second electric conductors and the two upper electrodes. A Mem switch has to have signal terminals in order to apply signals to the electric conductors so that a current signal can be selectively allowed to flow between the first and second electric conductors.

Claim 20, Ozgur discloses the micro switch as claimed in claim 19, wherein any of the conductive layer, the electric conductors, the lower electrode, the upper electrode, the anchors and the signal terminals is formed of Au [paragraphs 48-50].

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bernard Rojas whose telephone number is (571) 272-1998. The examiner can normally be reached on M-F 8-4:00), every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin G. Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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LINCOLN DONOVAN
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